MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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INTRODUCTION.

The REVIEW for February, 1896, is based on 2,757 reports from stations occupied by regular and voluntary observers, classified as follows: 149 from Weather Bureau stations; 35 from U. S. Army post surgeons; 2,395 from voluntary observers; 32 from Canadian stations; 96 received through the Southern Pacific Railway Company; 30 from U. S. Life-Saving stations; 20 from Mexican stations. International simultaneous observations are received from a few stations and used together with trustworthy newspaper extracts and special reports.

The WEATHER REVIEW is prepared under the general editorial supervision of Prof. Cleveland Abbe. Unless otherwise specifically noted, the text is written by the Editor, but the statistical tables are furnished by Mr. A. J. Henry, Chief of the Division of Records and Meteorological Data. Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada, Mr. Curtis J. Lyons, Honolulu, Meteorologist to the Government Survey, and of Dr. Mariano Bárcena, Director of the Central Meteorological Observatory of Mexico.

CLIMATOLOGY OF THE MONTH.

GENERAL CHARACTERISTICS.

The month was characterized by an excess of pressure over the Rocky Mountain and Pacific Coast regions; by low temperatures throughout the Atlantic and Gulf States, but an excess in the Plateau Region and the northern Slope; an excess of precipitation on the coasts of Washington and Oregon, the lower Lake Region, New England, the Middle States, North and South Carolina.

ATMOSPHERIC PRESSURE.

[In inches and hundredths.]

The distribution of mean atmospheric pressure reduced to sea level, as shown by mercurial barometers, not reduced to standard gravity, and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), is shown by isobars on Chart IV. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border.

The *mean pressures* during the current month were highest in northern Utah and Nevada and southern Idaho, and lowest in eastern Newfoundland. The highest were: Salt Lake City, 30.27; Idaho Falls, 30.25; Winnemucca and Carson City, 30.24; Roseburg, 30.21. The lowest were: St. Johns, N. F., 29.61; Sydney, 29.71; Charlottetown, 29.74; Chatham, 29.76; Yarmouth, 29.78; Eastport, 29.79.

As compared with the normal for February, the mean pressure was in excess throughout the Rocky Mountain and Pacific Coast regions, but deficient throughout the interior and the Atlantic States. The greatest excesses were: Fort Canby, 0.23; Eureka, 0.13; Portland, Oreg., and Roseburg, 0.10. The greatest deficits were: St. Johns, N. F., 0.31; Yarmouth, 0.26; Sydney, 0.24; Nantucket, 0.23; New Haven, Chatham, New York, Kingston, Oswego, and Harrisburg, 0.22.

As compared with the preceding month of January, the pressures reduced to sea level show a decided rise on the coasts of Washington, Oregon, and northern California, but an unusual fall throughout Quebec and Ontario, the Middle and Eastern States. The greatest rises were: Roseburg, 0.28; Fort Canby, 0.27; Tatoosh Island, 0.26; Eureka, 0.25; Portland, Oreg., 0.24; Port Angeles, 0.23. The greatest falls were: Father Point, 0.37; Montreal and Quebec, 0.36; Chatham, 0.34; Portland, Me., and Northfield, 0.33; Eastport, Boston, Albany, and Kingston, 0.32.

AREAS OF HIGH AND LOW PRESSURE.

By Prof. H. A. HAZEN.

During the month fourteen low and seven high areas have been sufficiently well defined to be projected upon Charts I and II, respectively. In addition to these tracks there was an area of high pressure in the middle Plateau Region that continued from the 17th to the end of the month. The following brief description will supplement the information given by the table and charts:

LOW AREAS.

I.—Was first noted at the west end of Lake Superior on the last day of January; its motion was nearly due east, and it disappeared off Newfoundland a. m. of 3d.

II.—First noted in the west Gulf a. m. of 1st; its motion was northerly, and it was last observed, a. m. of 6th, over Lake Superior. Precipitation in twenty-four hours of 2.86 inches at Shreveport, and 2.60 at Vicksburg, was measured a. m. of 2d.

III.—This was the most notable storm of the month and gave rise to Storm Bulletin No. 1 of 1896. It was first noted in the west Gulf, a. m. of 4th, with a pressure of 29.70 at Corpus Christi. Its intensity rapidly increased, and on the evening of 6th it was central over New York, with a pressure of 28.70 at New York City and a wind velocity of 70 miles per hour. It was last seen in the Gulf of St. Lawrence p. m.

of 7th. The rainfall rapidly increased on the Atlantic Coast, 3.20 inches being measured in twelve hours at Kittyhawk a. m. of 6th.

IV.—First noted, p. m. of 4th, to the north of Montana. The motion was eastward to the north of stations of observation.

V.—First noted at the same point as the last, p. m. of 8th. Moving in an easterly direction, it finally disappeared in the St. Lawrence Valley a. m. of 11th.

VI.—Like the two last, this storm was first noted to the north of Montana. Its motion was east and southeast, and it was quickly dissipated to the north of Lake Superior a. m. of 13th.

VII.—This storm began in the middle Plateau Region on the same day that VI was developing north of Montana. Its motion was southeast at first, and it turned to northeast p. m. of 12th in Arkansas. It was last seen off Newfoundland a. m. of 15th.

VIII.—This storm appeared on the north Pacific Coast p. m. of 12th. Its motion was a very little south of east and it disappeared off the New England coast a. m. of 16th.

IX.—First noted to the north of Montana a. m. of 16th. Its path was to the north of stations of observation and it disappeared in the Gulf of St. Lawrence a. m. of 21st.

X.—Like the last this storm originated to the north of Montana p. m. of 19th. Its motion was eastward and it was last seen over Newfoundland a. m. of 25th.

XI.—First noted in the same region as the two last, p. m. of 23d. Its motion was east and southeast, and it was last seen n Virginia p. m. of 26th.

XII.—As in the three last cases this storm was first seen to the north of Montana. Its motion was east and it was last seen p. m. of 28th in the valley of the St. Lawrence river.

XIII.—Began on the north Pacific Coast a. m. of 27th. Its motion was southeast and it was last seen in Mississippi p. m. of 29th.

XIV.—While the last storm was in the middle Plateau Region a disturbance was noted in northern Louisiana a. m. of 28th. This could not properly be called a gulf storm, and there was no heavy rainfall connected with it. Its motion was northeast and it was last seen off the New Jersey coast p. m. of 29th. This storm will appear as I in the March WEATHER REVIEW.

HIGH AREAS.

This February may be regarded as one of the mildest experienced in this country in twenty-five years as regards very low temperature or great changes. The only cold wave of any severity was the one accompanying high No. VI, and in this there were few temperature falls of 30° in twenty-four hours.

I.—First noted off the middle Pacific Coast p. m. of 1st. Its motion was very slow and erratic at first and it hovered in the middle Plateau Region for seven days. Its motion was then to southeast and it was last seen in the east Gulf p. m. of 11th.

II.—Was first seen to the north of Lake Superior p. m. of 2d. Its path was to the north of the stations of observation and it disappeared near Newfoundland a. m. of 6th.

III.—Noted off the North Pacific coast p. m. of 9th. Its motion was east-southeast for two days, then it turned northeast and disappeared off Cape Cod a. m. of 13th.

IV.—This high appeared twenty-four hours after the last, and in the same place. Its motion was southeast and east, and it was last seen off South Carolina, p. m. of 14th.

V.—This was first noted to the north of Montana a. m. of 12th. In twenty-four hours the pressure had risen slightly to 30.66. The motion was southeast and east, and it disappeared to the north of Lake Superior a. m. of 14th.

VI.—This high, like the last, was seen first to the north of Montana p. m. of 14th. The pressure rose rather rapidly in the center and reached 30.74 (highest of the month) a. m. of 16th. The motion was southeast, east, and northeast, and it was last seen in the Gulf of St. Lawrence p. m. of 18th. A temperature fall of 41° in twenty-four hours was noted at Block Island a. m. of 17th.

VII.—This high also originated off the north Pacific Coast p. m. of 16th. Its motion was first east, reaching Manitoba a. m. of 19th, then southeast, reaching Florida p. m. of 23d.

From the 17th to the end of the month the pressure continued high in the Plateau region but there was no motion at all, and hence the condition has not been charted or recorded.

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long W.	Length.	Duration.	Daily.	Hourly.
Low areas.		°	°		°	°	*Miles.*	*Days.*	*Miles.*	*Miles.*
I*	31, p. m.	47	91	3, a. m.	48	52	1,880	2.5	752	31.4
II	1, a. m.	27	96	6, a. m.	48	88	1,900	5.0	380	15.9
III	4, a. m.	38	96	7, p. m.	47	59	2,560	3.5	732	30.5
IV	4, p. m.	51	113	11, a. m.	48	54	4,260	6.5	656	27.3
V	8, p. m.	54	114	11, a. m.	47	76	1,760	2.5	704	29.3
VI	11, a. m.	55	116	13, a. m.	50	89	1,440	2.0	720	30.0
VII	11, a. m.	40	112	15, a. m.	47	52	3,520	4.0	880	36.7
VIII	12, p. m.	49	122	16, a. m.	42	68	2,840	3.5	813	33.9
IX	16, a. m.	53	118	21, a. m.	48	60	2,940	5.0	588	24.5
X	19, p. m.	52	119	25, a. m.	49	54	2,990	5.5	544	22.7
XI	23, p. m.	54	121	26, p. m.	38	78	2,490	3.0	830	34.6
XII	25, p. m.	55	114	28, p. m.	48	74	1,870	3.0	624	26.0
XIII	27, a. m.	47	127	29, p. m.	33	89	2,340	2.5	936	39.0
XIV	28, a. m.	32	92	29, p. m.	37	77	1,160	1.5	772	32.2
Sums							33,950	50.0	9,931	
Mean of 14 paths									709	29.6
Mean of 50.0 days									679	28.3
High areas.										
I	1, p. m.	41	125	11, p. m.	27	83	4,300	10.0	430	18.0
II	2, a. m.	50	85	6, a. m.	47	59	1,630	4.0	408	17.0
III	9, p. m.	47	126	13, a. m.	41	69	3,240	3.5	926	38.6
IV	10, p. m.	46	126	14, p. m.	33	80	3,180	4.0	795	33.1
V	12, a. m.	55	114	14, a. m.	50	88	1,360	2.0	681	28.4
VI	14, p. m.	54	105	18, p. m.	48	61	2,520	4.0	631	26.3
VII	16, p. m.	45	126	23, p. m.	38	84	4,030	7.0	576	24.0
Sums							30,260	34.5	4,447	
Mean of 7 paths									635	26.5
Mean of 34.5 days									587	24.5

*January 31.

LOCAL STORMS.

By A. J. HENRY, Chief of Division of Records and Meteorological Data.

It is designed to give in this connection a brief account of losses of life and property by violent local winds. The winds accompanying a general storm often attain considerable violence, and much damage may be done over a large section of ountry. Usually, a reference will be made to cases of destruction by the winds accompanying a general storm, but it should be understood that estimates of property loss in connection therewith are much more liable to error than in cases of purely local storms.

The winds of the general storm of the 5th to 7th are reported as having attained tornadic violence in the northern part of Thomas County, Georgia, on the 5th, although there is no evidence that a true tornado occurred. Fences and outbuildings were blown down and standing timber was damaged. A squall from the northeast, lasting but a minute or so, injured 2 persons and did considerable damage to roofs, chimneys, and lumber mills, in Mobile, Ala.; a few ships in the harbor were also damaged. The squall was confined to a narrow path and lasted only for a few moments; otherwise, considerable damage might have been done. The press despatches report that on the same date buildings were unroofed and a church was destroyed in the vicinity of Rocky Mount, N. C.